	Type	L #	Hits	Search Text	DBs	Time Stamp
1	BRS	L1	75482	(voice or sound or audio or audible or vocal or vocally) near5 (instruction or instructing or command or commanding or inform or informing or informed or information)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB; USOCR	2002/04/20 19:24
2	BRS	L2	112164	(instruction or instructing or command) near5 (operating or operation)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB; USOCR	2002/04/20 19:19
3	BRS	L3	9270	2 near5 (customer or user or client or operator)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB; USOCR	2002/04/20 19:24
4	BRS	L4	260	1 near10 3	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB; USOCR	2002/04/20 19:23
5	BRS	L5	50085	(voice or sound or audio or audible or vocal or vocally) near5 (customer or user or client or operator)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB; USOCR	2002/04/20 19:25

	Type	L #	Hits	Search Text	DBs	Time Stamp
6	BRS	L6	232	2 near5 5	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB; USOCR	2002/04/20 19:25
7	BRS	L7	16	6 near5 (atm or teller or banking or machine or transaction or terminal)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB; USOCR	2002/04/20 19:25
8	BRS	L8	14	4 and 7 Scanned Ti,Ab,kwic all	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB; USOCR	2002/04/20 19:56
9	BRS	L9	22	@pd<=19710101 and (705/1 or 705/35 or 705/39 or 705/42 or 705/43).ccls. Scanned Ti all	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB; USOCR	2002/04/20 19:58

	Document ID	Issue Date	Inventor	Current OR	Current XRef	Pages
1	WO 200028495 A	20010905	BLACK, J S et al.			22
2	JP 11308309 A	19991105				6
3	EP 61839 A	19821006	KITAMURA, K			14
4	US 5991726 A	19991123	Immarco, Peter et al.	704/270	704/274; 704/275	10
5	US H001708 H	19980203	Davidson, Leonard et al.	700/240	235/381	40
6	US 5036472 A	19910730	Buckley, Stephen P. et al.	700/233	347/110; 700/234; 700/235	19
7	US 4462080 A	19840724	Johnstone, Richard et al.	704/200	381/110	12

L8 results

US-PAT-NO: 4462080
DOCUMENT-IDENTIFIER: US 4462080 A
TITLE: Voice actuated machine control
DATE-ISSUED: July 24, 1984
INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Johnstone; Richard	Brookfield	WI	N/A	N/A
Kirkham; Edward E.	Brookfield	WI	N/A	N/A

US-CL-CURRENT: 704/200,381/110

ABSTRACT: A voice actuated control system suitable for use on a computer numerically controlled (CNC) machine tool includes a pair of radio frequency transmitters and a pair of radio frequency receivers, one of the radio frequency receivers and one of the radio frequency transmitters being located at the machine tool site and the other radio frequency receiver and radio frequency transmitter being carried by the human machine tool operator. Operator-spoken commands are transmitted through the operator's transmitter to the machine tool receiver which outputs an audio signal to a voice interpreter that converts the received voice commands into digital signals which are transmitted to the CNC machine tool control system to control machine tool operation. Digital signals generated by the CNC machine tool control system, either in response to received operator commands or in accordance with variations in machine tool operating conditions, are converted by a speech synthesizer into synthesized audio signals representing speech phrases indicative of machine tool operation conditions. The speech synthesizer audio signals are transmitted to the operator to audibly inform him or her that the previously transmitted voice commands have been received or that further instructions are required.

11 Claims, 5 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 3

---------- KWIC ---------

DEPR: In an operation, when voice commands are to be transmitted to the operator to audibly apprise the operator of machine tool operating conditions either in response to an operator-spoken voice command received through the speech interpreter or the response to a change in machine tool operating conditions, computer 50 (FIG. 1) under command of the voice control program stored in memory 55 (FIG. 1) transmits a chip select signal across bi-directional data bus 88 to speech processor 80 to alert the speech processor that data, in the form of digital signals indicative of the address location of the stored digital words representing the synthesised speed patterns corresponding to the particular then-occurring machine tool operating condition, will be forthcoming. Thereafter, computer 50 transmits the selected address to speech processor 80 and, upon receipt of the address data from computer 50, speech processor 80 transmits the selected address along address bus 90 to speech ROM 82. In response, speech ROM 82 transmits to speech processor 80 across data bus 92, the digital words stored at the addresses previously received from

the speech processor via address bus 90. Following receipt of the digital words from speech ROM 82, speech processor 80 converts the digital words into audio signals and then transmits an interrupt to signify completion of this task. Upon receipt of a write signal from the machine tool control system, speech processor 80 supplies the audio signals to transmitter 16 for subsequent transmission to the operator. For a further, more detailed understanding of the operation of speech processor 80, reference should be had to the article "Speech-Synthesis Chip Borrows Human Intonation" on pages 113-180 of the Apr. 10, 1980 edition of Electronics. Although voice emulator 64 has been described in particular detail, those skilled in the art will recognize that other speech synthesis circuits could easily be employed.

DEPR: The foregoing describes a voice actuated controller for transmitting commands to the computer controlled system to control the operation thereof in accordance with voice commands spoken by an operator and for transmitting to the operator speech phrases indicative of the operation of the computer controlled system.

CLPR: 1. Apparatus for enabling a human operator to control the operation of a computer controlled system in accordance with voice commands and to receive audible information therefrom indicative of computer controlled system operating conditions comprising:

CLPR: 7. For use with a computer numerically controlled (CNC) machine tool comprised of a numerically controlled (N/C) machine tool which is controlled by a machine tool control system, apparatus for enabling a human operator distal from said CNC machine tool to be audibly apprised of the machine tool operating conditions and for enabling said human operator to control the operation of said CNC machine tool by voice commands, said apparatus comprising:

US-PAT-NO: 4462080
DOCUMENT-IDENTIFIER: US 4462080 A
TITLE: Voice actuated machine control
DATE-ISSUED: July 24, 1984
INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Johnstone; Richard	Brookfield	WI	N/A	N/A
Kirkham; Edward E.	Brookfield	WI	N/A	N/A

US-CL-CURRENT: 704/200; 381/110

ABSTRACT: A voice actuated control system suitable for use on a computer numerically controlled (CNC) machine tool includes a pair of radio frequency transmitters and a pair of radio frequency receivers, one of the radio frequency receivers and one of the radio frequency transmitters being located at the machine tool site and the other radio frequency receiver and radio frequency transmitter being carried by the human machine tool operator. Operator-spoken commands are transmitted through the operator's transmitter to the machine tool receiver which outputs an audio signal to a voice interpreter that converts the received voice commands into digital signals which are transmitted to the CNC machine tool control system to control machine tool operation. Digital signals generated by the CNC machine tool control system, either in response to received operator commands or in accordance with variations in machine tool operating conditions, are converted by a speech synthesizer into synthesized audio signals representing speech phrases indicative of machine tool operation conditions. The speech synthesizer audio signals are transmitted to the operator to audibly inform him or her that the previously transmitted voice commands have been received or that further instructions are required.

11 Claims, 5 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 3

--------- KWIC ---------

Abstract Text - ABTX: A voice actuated control system suitable for use on a computer numerically controlled (CNC) machine tool includes a pair of radio frequency transmitters and a pair of radio frequency receivers, one of the radio frequency receivers and one of the radio frequency transmitters being located at the machine tool site and the other radio frequency receiver and radio frequency transmitter being carried by the human machine tool operator. Operator-spoken commands are transmitted through the operator's transmitter to the machine tool receiver which outputs an audio signal to a voice interpreter that converts the received voice commands into digital signals which are transmitted to the CNC machine tool control system to control machine tool operation. Digital signals generated by the CNC machine tool control system, either in response to received operator commands or in accordance with variations in machine tool operating conditions, are converted by a speech synthesizer into synthesized audio signals representing speech phrases indicative of machine tool operation conditions. The speech

synthesizer audio signals are transmitted to the operator to audibly inform him or her that the previously transmitted voice commands have been received or that further instructions are required.

Brief Summary Text - BSTX: It is an object of the present invention to provide a control system for a machine tool which is responsive to voice commands spoken by a human operator.

Brief Summary Text - BSTX: Briefly, in accordance with the preferred embodiment of the invention, apparatus for controlling a computer controlled system, such as a computer numerically controlled (CNC) machine tool, in accordance with voice commands spoken by a human operator, comprises a first and second radio frequency transmitter and receiver pairs; one transmitter-receiver pair being located at the site of the machine tool, and the other transmitter-receiver pair being carried by the operator. The radio transmitter carried by the operator continuously transmits a radio frequency carrier signal and during intervals when operator-spoken voice commands are to be transmitted to the machine tool control system, the operator's radio frequency transmitter superimposes on the radio frequency carrier signal a voice modulated signal varying in accordance with operator-spoken commands entered to the transmitter through the operator's microphone. The receiver at the machine tool site is tuned to receive the radio frequency carrier signal transmitted from the operator's transmitter and during intervals when there is a voice-modulated signal superimposed on the radio frequency carrier signal as will be the case when the operator transmits voiced commands to the machine tool, the receiver at machine tool site demodulates the voice-modulated signal to produce an audio signal varying accordingly. A voice interpreter, typically under the control of the machine tool control system, converts audio signals received from the machine tool receiver into a digital signal which is then supplied to the machine tool control system to vary the operation thereof accordingly. In response to the digital signals received from the voice interpreter, or in response to changes in machine tool operating conditions, the machine tool control system generates digital signals which are supplied to a voice emulator. The voice emulator converts the digital signal generated by the machine tool control system into synthesized audio signals, representing speech phrases which are indicative of machine tool operating conditions. The audio signals produced by the voice emulator are supplied to the radio frequency transmitter at the machine tool site for superimposition on the radio frequency carrier signal continuously transmitted by the machine tool radio frequency transmitter. The voice modulated radio frequency signals transmitted by the machine tool transmitter are received and demodulated by the operator's receiver to provide audio signals which are converted by the operator's earphone into audible speech phrases representing machine tool operating conditions.

Detailed Description Text - DETX: Referring now to FIG. 5 there are shown the details of hand-holding logic circuit 30. Hand-holding logic circuit 30 comprises a band pass filter 38 and a band stop filter 40 which are each supplied at their respective inputs with audio signals from receiver 18, (FIG. 1), representing information indicative of machine tool operating conditions, transmitted by transmitter 16 (FIG. 1). In practice, the information transmitted by transmitter 16 consists of a continuous wave radio frequency carrier signal on which is superimposed voice-modulated radio frequency signals which vary in accordance with synthesized audio signals representing speech

phrases indicative of machine tool operation. Band stop filter 40 filters out the single frequency audio signal, corresponding to the single frequency signal carrier transmitted by transmitter 16, to supply the operator's earphone with the audible information indicative of machine tool operation. In this manner, the operator is audibly apprised about machine tool operating conditions.

Detailed Description Text - DETX: Memory 55, in addition to containing one or more machine part programs, also contains three other programs, one of which is an operating system or an executive program which is executed by computer 50 to control the execution of machine part program as well as the two remaining programs which consist of a diagnostic program that enables the CNC machine tool to communicate with an off-site diagnostic computer in the manner described in U.S. Pat. No. 3,882,305 issued to Richard Johnstone on May 6, 1975, and a voice control program. It is the voice control program which enables computer 50 to respond to voice commands spoken by the operator and transmitted to the machine tool by transmitter 14 (FIG. 2) and which enables the computer to communicate with the operator by synthesizing audio signals representing speech phrases indicative of machine tool operating conditions. Memory 55 is supplemented by a disk drive 60 coupled through I/O port 54 to computer 60. Typically, disk drive 60 stores additional machine part programs.

Detailed Description Text - DETX: As alluded to eariler, before voice interpreter 62 can translate the operator spoken voice commands into digital signals which are readily recognizable by the machine tool computer, it is necessary to train the voice interpreter to recognize the operator's spoken commands . This is accomplished when switch 72 is placed in the "train" position by having the operator speak all the possible commands into his or her microphone so that the digital representation of each operator spoken command can be stored in random access memory 70 of the voice interpreter for comparison against subsequently received operator-spoken commands. Each of the operator-spoken voice commands entered to the voice interpreter during the interval that switch 73 is in the "train" position is preselected so as to correspond to a separate one of the digital signals stored in read only memory 76 which each represent the electrical signal equivalent of a separate one of the possible machine tool control system commands.

Detailed Description Text - DETX: Once voice interpreter 62 has been "trained", that is to say, that the digital representation of each of the possible operator-spoken voice commands have been entered into the voice interpreter random access memory, then the voice interpreter is operative, while switch 72 is in the "recognize" position, to translate subsequently spoken operator commands received by the voice interpreter into digital information by undertaking a bit by bit comparison of the digital signal representing the subsequently entered operator command against each bit of the previously stored digital signal representations of each of the operator spoken commands entered into RAM 70 during intervals while switch 72 was in the "train" position. This bit by bit comparison is performed by microprocessor 74. Once a match between all or most of the digital bits of the signal representing the subsequently received operator spoken command with one of the digital signals previously entered to the voice interpreter while switch 72 was in the "train" position is found, indicating that microprocessor 74 has matched the subsequently received

operator-spoken voice command with a specific one of the previously received operator spoken voice commands, then microprocessor 74 retrieves the digital signals stored in ROM 76 representing the machine tool command corresponding to the subsequently received operator spoken voice command . The digital signal retrieved from ROM 76 is then transmitted to machine tool computer 50 to alter the operation thereof accordingly. The above-described voice interpretator is only one example of the various voice interpreting circuits now available. Those skilled in the art will appreciate that other voice interpretation circuits could be employed as well.

Claims Text - CLTX: 7. For use with a computer numerically controlled (CNC) machine tool comprised of a numerically controlled (N/C) machine tool which is controlled by a machine tool control system, apparatus for enabling a human operator distal from said CNC machine tool to be audibly apprised of the machine tool operating conditions and for enabling said human operator to control the operation of said CNC machine tool by voice commands, said apparatus comprising:

Claims Text - CLTX: first radio frequency transmitter means for transmitting a continuous wave radio frequency carrier signal and for superimposing on said carrier signal a voice modulated radio frequency signal representing operator-spoken voice machine tool commands ;

Claims Text - CLTX: second radio frequency receiver means for receiving said carrier signal transmitter by said second radio frequency transmitter means and for receiving and demodulating said voice modulated signals sperimposed on said carrier signal transmitted by said second radio frequency transmitter means to provide audible information to the operator indicative of machine tool operating conditions.

DIALOG 20 APRIL 2002

File 2:INSPEC 1969-2002/Apr W2 (c) 2002 Institution of Electrical Engineers
File 9:Business & Industry(R) Jul/1994-2002/Apr 19 (c) 2002 Resp. DB Svcs.
File 15:ABI/Inform(R) 1971-2002/Apr 20 (c) 2002 ProQuest Info&Learning
File 16:Gale Group PROMT(R) 1990-2002/Apr 19 (c) 2002 The Gale Group
File 20:Dialog Global Reporter 1997-2002/Apr 20 (c) 2002 The Dialog Corp.
File 35:Dissertation Abs Online 1861-2002/Apr (c) 2002 ProQuest Info&Learning
File 65:Inside Conferences 1993-2002/Apr W2 (c) 2002 BLDSC all rts. reserv.
File 77:Conference Papers Index 1973-2002/Mar (c) 2002 Cambridge Sci Abs
File 99:Wilson Appl. Sci & Tech Abs 1983-2002/Mar (c) 2002 The HW Wilson Co.
File 148:Gale Group Trade & Industry DB 1976-2002/Apr 19 (c)2002 The Gale Group
File 160:Gale Group PROMT(R) 1972-1989 (c) 1999 The Gale Group
File 233:Internet & Personal Comp. Abs. 1981-2002/Apr (c) 2002 Info. Today Inc.
File 256:SoftBase:Reviews,Companies&Prods. 85-2002/Mar (c)2002 Info.Sources Inc
File 275:Gale Group Computer DB(TM) 1983-2002/Apr 19 (c) 2002 The Gale Group
File 347:JAPIO Oct/1976-2001/Dec(Updated 020401) (c) 2002 JPO & JAPIO
File 348:EUROPEAN PATENTS 1978-2002/APR W02 (c) 2002 European Patent Office
File 349:PCT FULLTEXT 1983-2002/UB=20020418,UT=20020411 (c) 2002 WIPO/Univentio
File 474:New York Times Abs 1969-2002/Apr 19 (c) 2002 The New York Times
File 475:Wall Street Journal Abs 1973-2002/Apr 19 (c) 2002 The New York Times
File 476:Financial Times Fulltext 1982-2002/Apr 20 (c) 2002 Financial Times Ltd
File 583:Gale Group Globalbase(TM) 1986-2002/Apr 20 (c) 2002 The Gale Group
File 610:Business Wire 1999-2002/Apr 20 (c) 2002 Business Wire.
File 613:PR Newswire 1999-2002/Apr 20 (c) 2002 PR Newswire Association Inc
File 621:Gale Group New Prod.Annou.(R) 1985-2002/Apr 19 (c) 2002 The Gale Group
File 624:McGraw-Hill Publications 1985-2002/Apr 19 (c) 2002 McGraw-Hill Co. Inc
File 634:San Jose Mercury Jun 1985-2002/Apr 19 (c) 2002 San Jose Mercury News
File 636:Gale Group Newsletter DB(TM) 1987-2002/Apr 19 (c) 2002 The Gale Group
File 810:Business Wire 1986-1999/Feb 28 (c) 1999 Business Wire
File 813:PR Newswire 1987-1999/Apr 30 (c) 1999 PR Newswire Association Inc
File 267:Finance & Banking Newsletters 2002/Apr 18 (c) 2002 The Dialog Corp.
File 268:Banking Info Source 1981-2002/Apr W2 (c) 2002 ProQuest Info&Learning
File 625:American Banker Publications 1981-2002/Apr 19 (c) 2002 American Banker

Set	Items	Description
S1	148248	(VOICE OR SOUND OR AUDIO OR AUDIBLE OR VOCAL OR VOCALLY) (5N) (INSTRUCTION OR INSTRUCTING OR COMMAND OR COMMANDING OR INFORM OR INFORMING OR INFORMED OR INFORMATION)
S2	44883	(INSTRUCTION OR INSTRUCTING OR COMMAND) (5N) (OPERATING OR OPERATION)
S3	2421	S2 (5N) (CUSTOMER OR USER OR CLIENT OR OPERATOR)
S4	62	S1 (10N) S3
S5	100473	(VOICE OR SOUND OR AUDIO OR AUDIBLE OR VOCAL OR VOCALLY) (5N) (CUSTOMER OR USER OR CLIENT OR OPERATOR)
S6	64	S2 (5N) S5
S7	3	S6 (5N) (ATM OR TELLER OR BANKING OR MACHINE OR TRANSACTION OR TERMINAL)
S8	2	S4 AND S7
S9	2	RD S8 (unique items) [Scanned ti,kwic all]
S10	85	S4 OR S6 OR S7
S11	83	RD S10 (unique items) [Scanned ti,kwic all]

4/9/9 (Item 2 from file: 813)
DIALOG(R)File 813:PR Newswire

1277419 NYTH033

Home Financial Network Introduces Speech Recognition **and Touch Screen Functionality for Home** ATM **(R)**

DATE: May 14, 1998 09:01 EDT WORD COUNT: 817

ATLANTA May 14 /PRNewswire/ -- Home Financial Network, Inc. (HFN), the leading developer of private-branded Internet banking software for the middle/mass market, today announced two innovations in home banking: the incorporation of **speech recognition** and touch screen technologies in its Home **ATM** (R) software. The announcement was made at the Faulkner & Gray Home Banking Forum in Atlanta, Georgia.

The inclusion of **speech recognition** and touch screen technologies for Home **ATM** enables HFN's bank partners to serve those consumers who find the traditional methods of interfacing with a computer -- namely via keyboard or mouse -- simply too difficult or too imposing. In particular, by providing voice and touch screen navigation, banks can serve those constituencies that arguably have the greatest need for home banking: the elderly and those with physical limitations.

"By using the human voice to replace all keyboard and mouse commands, millions of consumers who value the benefits of financial automation, but have been unwilling or unable to achieve the benefits through conventional means, can now do so with great ease and little or no training," said Daniel M. Schley, chairman and CEO of Home Financial Network. "Touch screen technology provides yet another simple and intuitive approach for dealing with technology. Whether the consumer is elderly, physically limited, or technology-terrified, the end result will be a further expansion in the number of consumers seeking remote banking services from our partner banks."

Speech Recognition Technology

With the **speech recognition** -enhanced version of Home **ATM** , users are able to perform all program navigation and execute all financial functions simply by speaking into a **microphone** connected to the PC. Recent advances make **speech recognition** technology fully capable of interpreting the basic **command** structure of focused applications such as Home **ATM** , with little training and a high degree of accuracy. Users are able to access their accounts and perform a wide range of banking transactions with the same fluidity as if they were speaking to a teller. When integrated into Home **ATM** Bill Pay, the same technology will allow users to **voice** -select a payee and record the amount to be paid simply by speaking.

Home **ATM** 's **speech recognition** enhancement is being developed using the Dragon NaturallySpeaking(TM) **speech** engine from Dragon Systems, Inc. and IBM's Via **Voice** technology.

" **Speech recognition** makes home banking easier and faster for Home **ATM** 's customers because they can focus on the tasks at hand rather than the interface. Home banking is an ideal application for **speech recognition** , with obvious appeal to a broad market," said Roger Matus, Vice President of Marketing for Dragon Systems, a leading provider of **speech recognition** technology.

Touch Screen Technology

Home **ATM** with touch-screen technology enables users to navigate the program and execute all banking and bill payment functions simply by touching the large "ATM command buttons" on the screen. This version of the product is not only quick to learn, but also exceptionally easy to use. To execute any program command, it's simply point and smudge.

HFN's touch screen technology uses ELO IntelliTouch controllers, designed for surface acoustic wave (SAW) touch screens. The company will

soon add AccuTouch controllers for touch screens that rely on capacitive and resistive technology. Home ATM's large, on-screen buttons and simplified command structure provide an ideal environment for touch screen usage.

Anticipated users for Home ATM with touch screen technology include consumers who are either keyboard or mouse phobic and consumers with limited physical dexterity. HFN is also developing a free-standing kiosk version of Home ATM using 100% Pure Java and touch screen design. These kiosks will be set up in bank lobbies and remote locations to provide consumers with direct access to account information and enable them to perform a wide variety of secure banking and bill pay transactions over the Internet.

About Home Financial Network, Inc. (http://www.homeatm.com)

Home Financial Network, Inc. develops and markets Internet-based home banking software that enables financial institutions to deliver branded electronic financial services to their mass market customers. The company's products, which include Home ATM Banking and Home ATM Bill Pay, are written in C++ and 100% Pure Java. They are designed to communicate over the Internet or over secure private networks, and are compliant with each of the leading home banking protocols, including OFX and Gold. Each of the company's home banking products are Y2K compliant.

For more information, contact: Ann Marie Lochner, Lochner & Hawk at 908-852-3656; or Tom Dittrich, Home Financial Network at 203-341-7403

SOURCE Home Financial Network, Inc.

CONTACT: Ann Marie Lochner of Lochner & Hawk, 908-852-3656; or Tom Dittrich of Home Financial Network, 203-341-7403

Web site: http://www.homeatm.com

COMPANY NAME: HOME FINANCIAL NETWORK, INC.
PRODUCT: COMPUTER, ELECTRONICS (CPR); BANKING, FINANCIAL SERVICES (FIN)
DESCRIPTORS: NEW PRODUCTS & SERVICES (PDT)
STATE: GEORGIA (GA)
SECTION HEADING: BUSINESS; TECHNOLOGY

4/9/22 (Item 1 from file: 713)
DIALOG(R)File 713:Atlanta J/Const.

05065922

INTELLIGENT CARDS USE OWNER'S VOICE INSTEAD OF A SIGNATURE

Atlanta Constitution (AC) - TUESDAY September 5, 1989
By: Robert Snowdon Jones Staff Writer
Section: BUSINESS Page: C01
Word Count: 369

TEXT:
It may not be much longer until the moment when you can say your credit is good -- and the store will take your word for it.

'Smart cards,' those credit cards with a computer chip inside, can now be used to store a "signature" of the cardholder's voice. The recent breakthrough provides a convenient way to match that voice print with the real thing. It could do away with customers having to remember identification numbers and make unauthorized card use nearly impossible, say its inventors.

Bell Communications Research (Bellcore), which provides technical support for the seven regional Bell holding companies, including Atlanta-based BellSouth Corp., is ready to license the technology to banks, businesses and other companies that handle credit card transactions.

"It's comparable in accuracy to fingerprint readers, but you can do it over the telephone," said Tim Feustel, a member of Bellcore's technical staff and co-inventor of the speaker verification system. He said the method is 99 percent accurate over the telephone.

The voice print is installed by having the owner speak into a **microphone** . The voice is scanned by a computer, producing a digital map of the voice. This map is stored permanently on the smart card.

Using the Bellcore technology with **voice recognition** equipment and a standard smart card, card readers with **microphones** could be installed in **automatic teller machines** . When the card is inserted, the reader equipment extracts the digitized **voice** signature from it and sends it to a computer. The computer compares the **voice** print to the card owner's voice when he speaks into a **microphone** .

In addition to voice signatures, the system allows the smart card to store voice commands, Mr. Feustel said. With a special reader mounted on a standard or pay phone, the card holder could say "Call home" and the card could dial the telephone.

Voice alterations caused by the common cold only reduce accuracy to about 98 percent. Laryngitis can wreak havoc with the system, though, Mr. Feustel conceded. In that case, an identification number is entered instead of a voice command.

CAPTION:
Photo

Color photo: A new 'smart card' system compares a credit-card user's voice to the voice signature on the card before authorizing a transaction.

DESCRIPTORS: CONSUMER; SECURITY; ELECTRONICS; EQUIPMENT; TECHONOLOGY
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